

# EXHIBIT 18



Comcast Cable  
One Comcast Center  
Philadelphia, PA 19103-2838

November 23, 2010

Matthew Berry  
Patton Boggs LLP  
2550 M Street, NW  
Washington, DC 20037

Re: Zoom Proposal

Matthew:

Thank you for forwarding Zoom's proposal. We have reviewed it carefully, and we believe that Comcast's practices are already consistent with Zoom's requests in many respects. In other respects, however, the practices advocated by the proposal would disserve not only Comcast and its customers, but also Zoom itself. That outcome is in neither party's interest.

You will find our responses to each of the specific proposals below. We have reordered the points in order to focus first on the non-testing-related issues, on which we appear to be fairly well aligned. On the testing issues, we want to provide a full picture of the Comcast DOCSIS testing and certification process and the concerns raised by your proposal to eliminate that process.

Separately, we have provided comments to Zoom regarding our initial testing of its new DOCSIS 2.0 modem. It is our sincere hope that, after you review this information, we can move forward to work productively with Zoom to complete that process and to certify other Zoom modems in the future.

\* \* \* \*

1. *Comcast will not attempt in any way to disadvantage Zoom cable modems in the CableLabs test and certification process.*

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**Comcast Response:** Comcast has never sought to disadvantage Zoom (or any other vendor) in the CableLabs testing/certification process, nor will we do so in the future. To the contrary, we believe that it is in everyone's interest for the testing process to result in a wide variety of DOCSIS devices from a range of vendors. This serves our customers by causing device prices to decline and feature competition between device makers to increase. Indeed, Comcast's commitment to a vendor-neutral testing and certification process is reinforced by the fact that we use precisely this approach in our *internal* testing and certification process. We apply the same testing suite to all like devices, regardless of the manufacturer submitting the particular device. Thus, we can reassure Zoom that it has no cause for concern on this issue.

In light of recent events, we are puzzled that Zoom would voice a concern that Comcast might seek to disadvantage Zoom's modems in *any* way, whether in the CableLabs process or more generally. As you know, Comcast recently offered to make special accommodations to test Zoom's new Broadcom-based

DOCSIS 2.0 modem for Comcast's networks -- notwithstanding that we no longer certify new DOCSIS 2.0 modems for use by customers, since they do not permit customers to receive the advertised speeds of our DOCSIS 3.0 plant, which has been deployed to over 80 percent of our footprint. I think that indicates that in our own testing process, we were prepared to extend an additional courtesy to Zoom, and we have done so. In short, we clearly are not disadvantaging Zoom in our own processes, nor would we do so in the CableLabs process.

2. *Comcast will be proactive in making it clear that cable modems on the Comcast list of currently approved cable modems are welcome on the Comcast network. They will do this by: (1) having a statement to this effect on the Comcast website, publicly available and easily found by the public; and (2) having its training program for Comcast customer-facing personnel include training to this effect.*

**Comcast Response:** Our practices are already consistent with the main concern expressed here. In the Frequently Asked Questions ("FAQ") section of Comcast Customer Central, which is our customer support website, our customers can readily find a link to a FAQ entitled "Which cable modems are approved for use with the Comcast High Speed Internet service?"<sup>1</sup> The response directs customers to the approved device list, located at <http://mydeviceinfo.comcast.net>, which lists two, currently approved Zoom devices.<sup>2</sup> In addition, in our FAQ explaining "How to Get the Most from Your Comcast High-Speed Internet Service," Comcast directs customers to use the appropriate device from the approved device list, referring them to the same "MyDeviceInfo" list.<sup>3</sup> There is no suggestion that customers should prefer any particular manufacturer's modems. To the contrary, in the FAQ, "Can I use my own modem with Comcast's new speeds," Comcast specifically advises customers that if they have *any* modem that is "included on the Comcast Approved Modem list, then you can use it . . ." -- provided, of course, that it is compatible with the customer's particular tier of service.<sup>4</sup> The same FAQ further explains that such a modem "can be leased from Comcast and is also available for purchase in retail outlets."<sup>5</sup> All of this information is easily found by simply typing in "modems" or "approved modems" in the Comcast Customer Central search box.<sup>6</sup>

We also train our Comcast customer care representatives to use this list when customers call with a relevant inquiry.

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<sup>1</sup> See <http://customer.comcast.com/Pages/FAQViewer.aspx?seoid=Which-cable-modems-are-approved-for-use-with-the-Comcast-High-Speed-Internet-service>.

<sup>2</sup> The list includes the Zoom 5241 and 5341.

<sup>3</sup> <http://customer.comcast.com/Pages/FAQViewer.aspx?Guid=ad45488f-d845-4db8-9e2b-7740252b3091#modem>.

<sup>4</sup> For example, the DOCSIS 1.1 modem from Zoom would not be able to support Extreme-105 service, and thus is not listed as compatible with that particular service tier.

<sup>5</sup> <http://customer.comcast.com/Pages/FAQViewer.aspx?Guid=42ad5c43-18cc-466a-82ce-b1344a47885b>.

<sup>6</sup> See <http://sitesearch.comcast.com/?q=approved+modems&cat=ccentral>.

3. *Comcast will henceforth certify all new Zoom cable modem models for use on its systems. Comcast may recognize that these models must still be approved by CableLabs, but is required to certify these models for use on its systems within two weeks of CableLabs approval. Comcast will neither require any additional testing for cable modems beyond that performed by CableLabs nor charge Zoom for certifying cable modems.*

**Comcast Response:** We cannot accommodate this request, nor do we believe it would be in Zoom's interest for us to do so. Comcast's internal testing is essential to ensure that a modem will perform as it should on Comcast's network. As we explain below, CableLabs testing certifies only that the modem meets basic Specifications; it is not designed to and does not vouch for the modem's performance within the distinct architecture of every DOCSIS provider's network. Thus, our internal testing protects customers *and* the modem vendor by ensuring that approved equipment is capable of providing the high quality service customers expect. This is not a trifling concern. Recently, Comcast tested a DOCSIS-certified modem that was unable to meet the bi-directional throughput requirements of Comcast's high-speed data service offering. Had that modem been certified for operation on Comcast's network before that failure was identified and addressed, it would have been a disservice not only to Comcast's customers, but also to the vendor.

As CableLabs itself makes clear, "[t]he CableLabs Certification/Qualification process determines equipment compliance with the Specifications. It *does not test for performance, quality, or other subjective characteristics.*"<sup>7</sup> In other words, CableLabs testing is a necessary but not a sufficient process. While CableLabs tests a device for basic interoperability with other DOCSIS equipment, it does not and cannot certify that the device will perform acceptably on a particular provider's DOCSIS network. While the DOCSIS specification is theoretically uniform, different operators use equipment from multiple vendors and set their own, network-specific performance requirements. As a result, each operator must perform its own, network-specific testing to ensure that a particular device is interoperable with all the equipment certified for its network and to assess which tier of its service will work with each device. Operators also must test to ensure that the device configuration files work as expected and otherwise assess real-world quality and performance.

For example, before certifying equipment for its network, Comcast runs certification tests with such equipment against all its deployed CMTS vendor models and CMTS configurations and production release levels to ensure that the device will perform adequately in all parts of the Comcast network. Comcast also performs tests designed to ensure that the modem responds well to specific conditions that might be experienced in the Comcast network. Thus, we conduct Comcast-specific stability testing designed to ensure that the modem can reliably reset itself and operate after a downstream cut-off which may occur during a maintenance window in our production network. These types of tests are not conducted by CableLabs.

Comcast also carefully tests devices to ensure that they perform adequately when used in ways that customers typically use devices in the real world, which often exposes weaknesses or performance flaws in a device that are not picked up in CableLabs testing. For example, CableLabs testing power-cycles the modem before each test, whereas Comcast certification requires testing based on continuous operation, since this is how customers are more likely to use their modem. Comcast's approach has uncovered "memory leak" issues in devices that would not be not picked up in CableLabs testing, because the power-cycling "resets" the modem and clears the problem. Comcast also performs multiple intervals of

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<sup>7</sup> See CableLabs Certification Wave Requirements and Guidelines, Revision 34 at 4 (Aug. 2010)(emphasis added).

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some tests in a short amount of time to verify the device's robustness in various Comcast operational scenarios that might be experienced over a longer period of time in the field.

The goal of Comcast's certification testing process is to ensure that certified devices will provide our customers with excellent and reliable service over the Comcast network. To that end, as you know, Comcast does not just identify problems during the testing/certification process. We also work with the vendor to fix those problems, improve the device, and ultimately achieve approval for a device that can be certified to perform well. This is very important to our customers, who rely on the Comcast Approved Device list in choosing their device, just as Zoom hopes they will. It also is very important for vendors like Zoom, who can be assured that customers will have a positive experience when using their device on the Comcast network.

For all these reasons, Comcast does not rely solely on CableLabs testing when certifying a device for operation on the network, and it would not be in Zoom's interest, or the interest of Zoom's prospective customers, for us to do so.

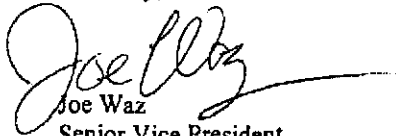
With respect to the other suggestions included in this request, we cannot guarantee a two-week certification process. Our process typically ranges from two to four weeks, barring unforeseen issues, which is a reasonably expeditious process given the quantity of equipment we must test. In addition, we have set test cycles that are scheduled in advance, and which may be subject to delay if we are required to engage in emergency testing in response to problems detected in our network. Nor are we able to waive the certification fee. The \$25,000 fee we charge helps defray our testing equipment and overhead costs, and any other fees are limited to our actual out-of-pocket costs. This fee, which of course is a fraction of the \$75,000 CableLabs testing fee, also guards against frivolous certification requests. Presumably Zoom, as one of the largest providers of cable modems in the United States, should not find this fee prohibitive.

4. *Comcast will not ask CableLabs to perform any additional tests for DOCSIS 2.0 and 3.0 cable modems other than those that are currently performed.*

**Comcast Response:** This request is similarly not in Zoom's or our customers' best interest. CableLabs has an established Engineering Change Request (ECR) process that is specifically designed to refine and improve the DOCSIS testing process based on real-world performance issues that are observed in the field. Indeed, the process of operators working closely with CableLabs to regularly update the core DOCSIS specifications has contributed to the enormous success of the DOCSIS specifications. The suggestion that CableLabs terminate this essential feedback loop – or that Comcast not submit suggestions to the ECR process or work with CableLabs in other ways to continuously improve the Specifications – could deprive customers of improvements to their Internet experience and to the performance of their cable modems. That is not something Zoom or any vendor could responsibly advocate.

Please let me know if you have any questions.

Sincerely,

  
Joe Waz  
Senior Vice President  
External Affairs and Public Policy

# EXHIBIT 19

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**From:** Berry, Matthew [MBerry@PattonBoggs.com]  
**Sent:** Wednesday, November 24, 2010 4:08 PM  
**To:** Waz, Joe; Martin, Kevin J.; ckogohc@gmail.com  
**Cc:** Cohen, David  
**Subject:** RE: Response to Zoom Proposal

Joe,

Thank you for the response and the effort that went into developing it.

At this point, Zoom respectfully requests that Comcast drop its P&E testing for all Zoom retail products. Comcast has not previously subjected Zoom products to such testing. Moreover, devices targeted for retail and not for sale to Comcast directly need only prove they do not harm the network. Second, Zoom wants its current modem application expedited through for approval by Comcast.

We had hoped to be able to resolve this issue before the holiday but happy to try to reach an agreement by the end of the day Friday. Absent an agreement on these points, Zoom will proceed to make its concerns a matter of public record at the Commission. Feel free to call me with any questions.

I hope that you have a Happy Thanksgiving.

Best regards,  
Matthew

Matthew Berry  
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(202) 457-7503  
[mberry@pattonboggs.com](mailto:mberry@pattonboggs.com)  
Admitted only in Virginia  
Supervision by Kevin Martin, a member of the D.C. Bar

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**From:** McIlvain, Gretchen [mailto:Gretchen\_McIlvain@Comcast.com] **On Behalf Of** Waz, Joe  
**Sent:** Tuesday, November 23, 2010 4:38 PM  
**To:** Berry, Matthew; Martin, Kevin J.; ckogohc@gmail.com  
**Cc:** Cohen, David  
**Subject:** Response to Zoom Proposal

Attached is a letter in response to the proposal, which you forwarded last week.

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If there are questions you would like addressed, I can do a quick phone call tomorrow morning at 10:30 EST. Please let me know.

Thank you,

Joe

## EXHIBIT 20

November 26, 2010

Matthew:

Thank you for your email. We, too, are hopeful this can be resolved today, and we believe the offer below should achieve that objective.

We do not read your request to mean that Zoom is asking for a waiver of the Comcast certification process for this or any other Zoom modem. It is apparent that Zoom recognizes the importance of the certification process. As Zoom itself has told customers, MSO modem certification is important "to be sure that [Zoom's] customers [are] able to successfully use its cable modem with" a particular U.S. service provider's network.<sup>1</sup> I note that Zoom correctly discloses that its modems undergo not only CableLabs certification but also "additional testing and certification by leading cable service providers including Comcast..."<sup>2</sup>

We will work with Zoom to expedite the certification process as much as possible for the DOCSIS 2.0 modem currently under review, subject to the resource constraints of the holiday season. As soon as Zoom addresses the problems that were identified (and have been communicated to Zoom) during the initial round of the certification process, we will work with Zoom to come up with a timeline that makes sense for both of us. Please let us know when we can expect to hear from Zoom in that regard.

As for Physical and Environmental ("P&E") testing, we believe that this is important for both the customer and the manufacturer. Zoom was advised of Comcast's intention to conduct such testing early in the process with its DOCSIS 2.0 modem currently under review, although Zoom is correct in noting that Comcast has not previously subjected retail modems to this additional testing. We have instituted P&E testing for all modems seeking certification for Comcast's network based on a number of important modem performance and safety issues we discovered in testing modems that we purchase on a wholesale basis for lease or resale. It is not helpful for customers who use Comcast "certified" modems (whether leased or purchased) to have critical performance issues that render those modems incapable of providing the quality service the customer expects over the Comcast network, nor is it in a retail vendor's interests to have a modem that cannot deliver the quality service of modems Comcast purchases at wholesale.

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<sup>1</sup> See "New Zoom DOCSIS 3.0 Cable Modem Ships to 2,600 U.S. Retail Stores," <http://www.zoomtel.com/about/news.html>.

<sup>2</sup> See [http://www.zoomtel.com/products/cable\\_overview.html](http://www.zoomtel.com/products/cable_overview.html).

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As explained in my letter of November 23, the performance issues that we identify and seek to resolve in P&E testing are not insignificant. In the course of our P&E testing, Comcast has made findings that have led us to ask manufacturers for equipment changes necessary to improve the reliability of devices that are eventually installed in customer homes. As I noted, CableLabs testing does not currently account for the variety of CMTS equipment in different providers' DOCSIS networks, or the real-world factors such as equipment temperature (*e.g.*, will all parts of the device be safe to touch when it has been in active use), humidity, vibration, and outside electrical and RF interference, among other things. P&E testing improves safety, performance, and reliability of modem equipment in the field, to the benefit of our customers *and* the modem vendor's customers. We are committed to this type of testing and we intend to encourage the industry to undertake it. We also believe the Commission, which has demonstrated its commitment to ensuring that consumers get what they pay for, will understand why this kind of testing is in the best interest of consumers and manufacturers alike.

That said, in the interest of expeditiously resolving our immediate dispute, we are willing to offer Zoom the following approach for P&E testing of its pending DOCSIS 2.0 modem.

- Comcast will supply Zoom with our list of P&E tests that Comcast requires for evaluating and ensuring the performance of the Zoom modem on Comcast's real world network. These tests are the same that we require of modems that Comcast purchases for lease or resale to its customers.
- Zoom may perform those tests independently -- in its own testing facilities, in those of its manufacturer, or any other location determined by Zoom -- at its earliest opportunity.
- Zoom will submit the results of that testing and a self-certification that the Zoom modem has satisfied those tests.
- Comcast will treat satisfactory test results as sufficient for certification of the Zoom modem. If Comcast identifies concerns with the testing results, we reserve the right to request more data and/or additional testing (any subsequent testing would again be performed by Zoom and/or their agents), which we will do promptly.
- We will impose no charge on Zoom for the P&E evaluation process for the pending DOCSIS 2.0 modem.

The above concession relieves Zoom's manufacturing facility in China of the burden of having to perform tests in the presence of Comcast engineers, and relieves Zoom of any cost associated with such testing, while ensuring that the design and manufacture of these devices satisfy standard P&E conditions. To reiterate, this offer will apply only to the pending Zoom DOCSIS 2.0 modem, and not to all devices in perpetuity.

If this is acceptable to Zoom, we will make the P&E testing requirements available immediately after the holiday. Please get back to me as soon as possible.

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Let me add that I am pleased that your earlier response indicated your appreciation for the thoroughness of our consideration of your earlier proposal, and that you have narrowed your request to us as indicated above. It is not our intention to require anything more of a retail modem provider than we would require of those who provide modems to us on a wholesale basis, but we cannot be put in a situation where our customers will be sold a modem that cannot deliver baseline quality, or is unsafe in any way, in a real-world operating environment.

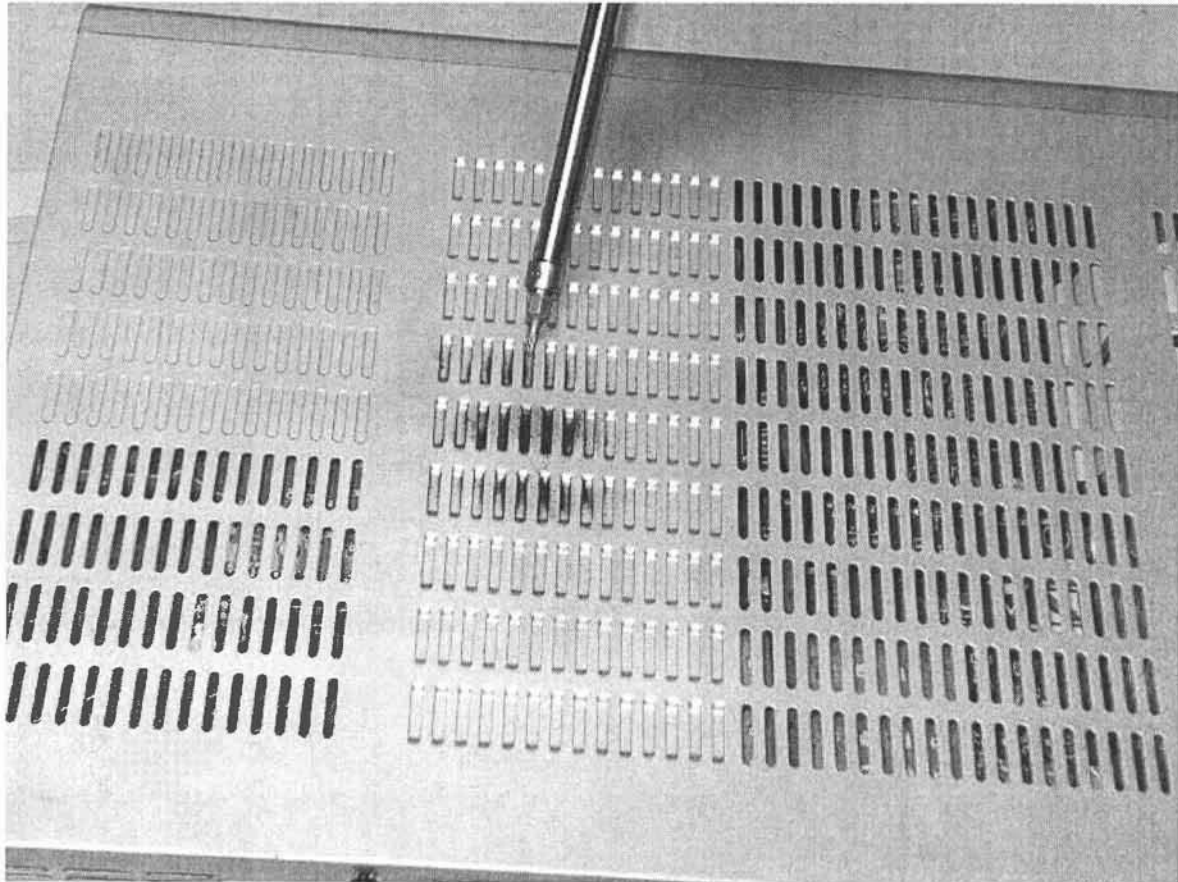
I look forward to hearing from you.

/s/

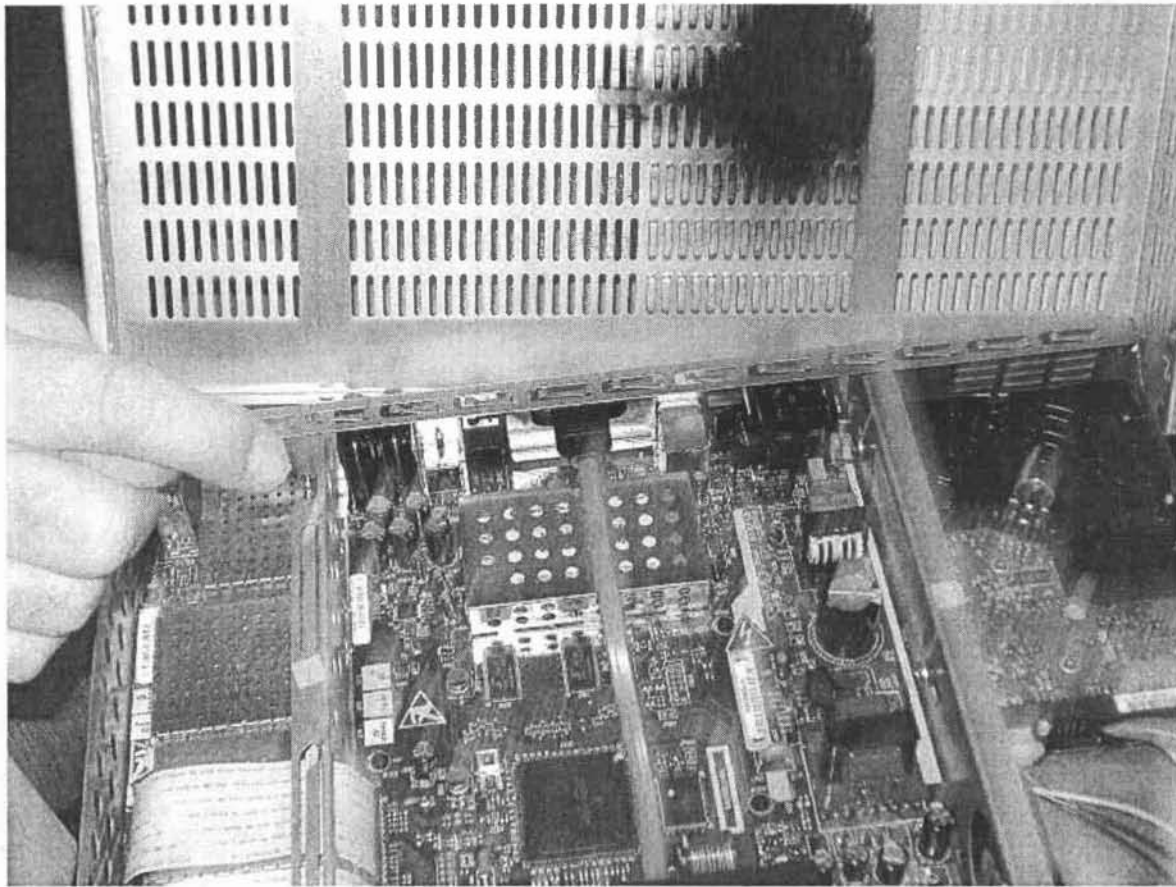
Joe Waz

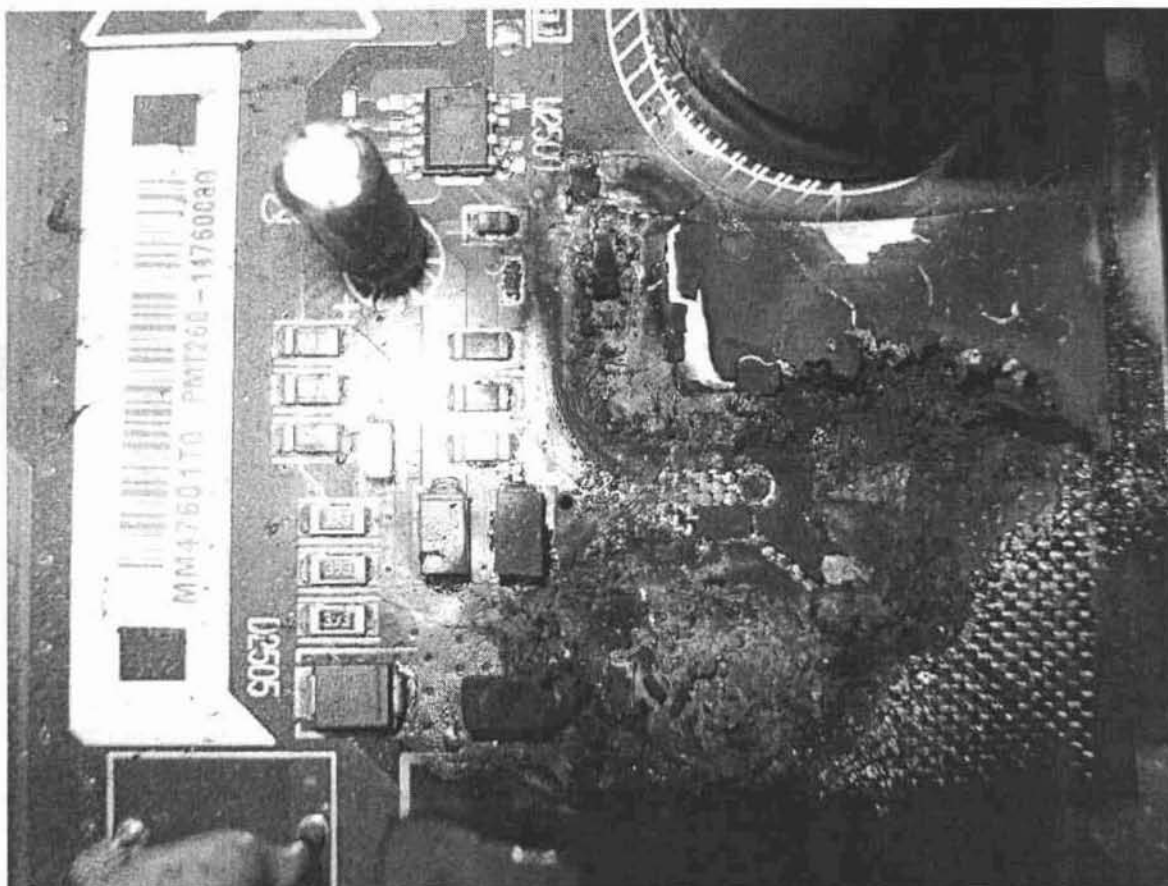
# EXHIBIT 21

Here are pictures of a few actual product failures and the reason we instituted the SMPS low voltage brown out testing:

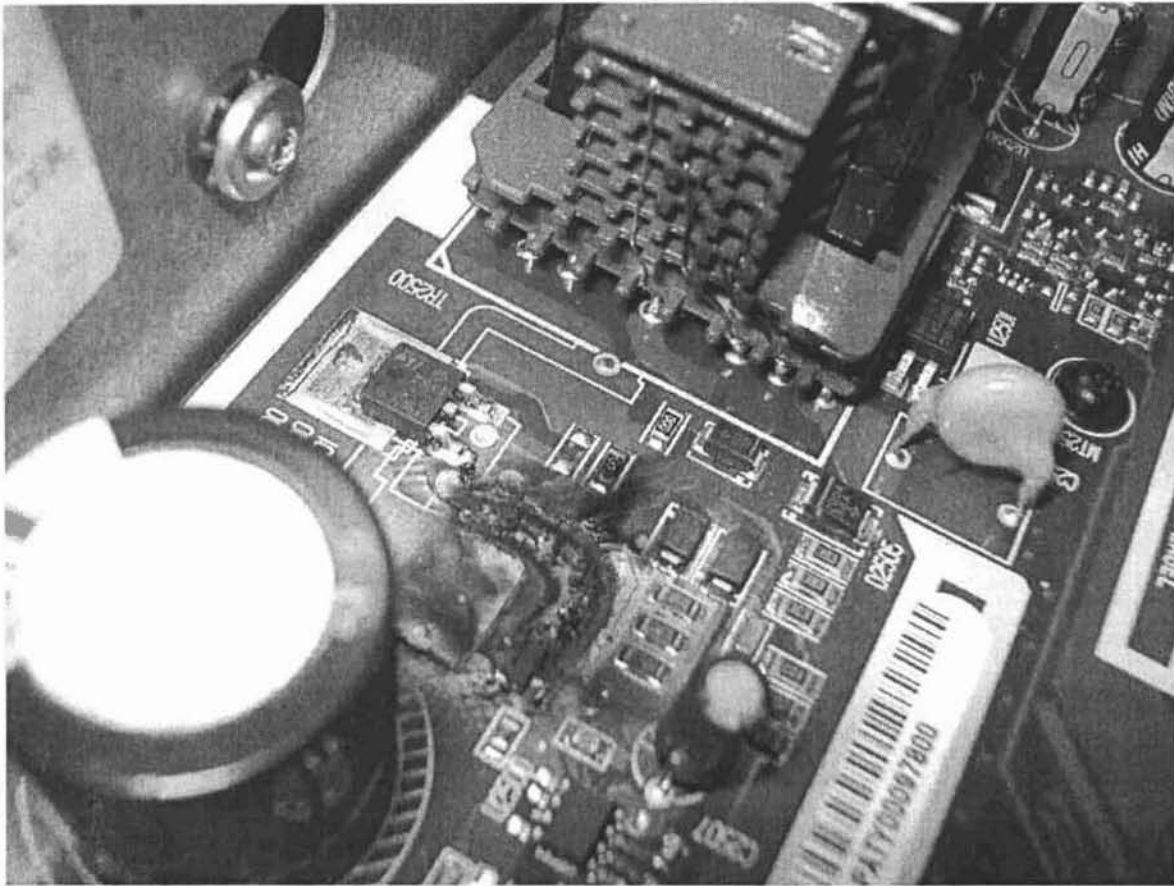


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